

**WHAT IS CLAIMED IS:**

1 1. A crane for freely suspending a load above the ground  
2 comprising:

- 3 (a) a lower crawler adapted for use with an excavator,  
4 (b) an upper body adapted for use with an excavator, the  
5 upper body having a receptacle adapted to accept an  
6 excavator boom,  
7 (c) a boom adapted to engage a crane body,  
8 (d) an adapter for engaging the receptacle of the excavator  
9 upper body as if the adaptor was the excavator boom,  
10 the adaptor and the receptacle fixedly secured together  
11 such that the adaptor defines a connector for receiving  
12 the crane boom in the same manner as the boom would  
13 be accepted by a crane body for providing a range of  
14 boom angles comparable to the range of boom angles  
15 available to the boom connected to the crane body.

1 2. The crane as defined in claim 1 wherein the excavator lower  
2 crawler comprises a first swivel at a position remote from the ground and  
3 a continuous belt drive track for mobilizing the crane over the ground.



1           8.     The crane as defined in claim 1 wherein the lifting device  
2 comprises an implement selected from the group of a sheave, a hook, an  
3 auxiliary hook, a main block, a whip line and a fast line.

1     ~~18.~~   A crane for freely suspending a load above the ground  
2 comprising:

3           (a)   a lower crawler adapted for use with an excavator, the  
4 lower excavator crawler comprising:

5               (1)   a first swivel at a position remote from the  
6 ground and

7               (2)   a continuous belt drive track for mobilizing the  
8 crane over the ground,

9           (b)   an upper body adapted for use with an excavator, the  
10 upper excavator body comprising:

11               (1)   a support member for providing structural  
12 integrity for the upper body,

13               (2)   a second swivel at a position proximate to the  
14 ground, and

15               (3)   a receptacle adapted to accept an excavator boom,  
16 the second swivel rotatably engaged with the  
17 first swivel of the lower excavator crawler for  
18 providing rotation of the upper excavator body  
19 upon the lower crawler when the lower crawler is  
20 stationary or mobilized,

005030-0226260

- 21 (c) a boom adapted to engage a crane body, the crane boom  
22 comprising:  
23 (1) a distal end having associated therewith at least  
24 one lifting device, and  
25 (2) a proximate end adapted to engage a crane body,  
26 and  
27 (d) an adapter for engaging the receptacle of the excavator  
28 upper body as if the adaptor was the excavator boom,  
29 the adaptor and the receptacle fixedly secured together  
30 such that the adaptor defines a connector for receiving  
31 the crane boom in the same manner as the crane boom  
32 would be accepted by a crane body for providing a range  
33 of boom angles comparable to the range of boom angles  
34 available to the boom connected to a crane body.

1 <sup>2</sup>  
~~10.~~ The crane as defined in claim <sup>1</sup>~~9~~ wherein the boom is  
2 telescoping.

1 <sup>3</sup>  
~~11.~~ The crane as defined in claim <sup>1</sup>~~9~~ further comprising a hoist in  
2 operative association with the crane boom.

1 <sup>4</sup>  
~~12.~~ The crane as defined in claim <sup>1</sup>~~9~~ further comprising a lifting  
2 device in operative association with the crane boom.

24

13. The crane as defined in claim 1 wherein the lifting device comprises an implement selected from the group of a sheave, a hook, an auxiliary hook, a main block, a whip line and a fast line.

14. A method for adapting an excavator for use as a crane, ~~the excavator comprising a lower crawler, an upper body and a receptacle secured to the upper body for receiving an excavation boom associated with an excavation implement, and a crane boom associated with a crane implement,~~ the method comprising the steps of:

(a) disengaging, if connected, the excavator boom from the receptacle,

(b) engaging an adaptor with the receptacle secured to the upper excavator body, the adaptor defining a connector for receiving the crane boom in the same manner as the crane boom would be accepted by a crane body for providing a range of boom angles comparable to the range of boom angles available to the boom connected to the crane body,

(c) engaging the crane boom with the connector, and  
(d) articulating the crane boom with respect to the connector in such a manner as to provide an excavator-crane apparatus having the same operating and stability characteristics as a crane.

665030-6220000

- 1 ~~15. A method for determining a luffing triangle effective to~~  
2 ~~provide a full or near-full capacity crane having a boom with a foot, a~~  
3 ~~cylinder and a frame, the luffing triangle method comprising the steps of:~~  
4 (a) locating a boom foot position on the frame,  
5 (b) locating a cylinder frame position on the frame such  
6 that the boom foot position and the cylinder frame  
7 position are required to be adequately spaced to provide  
8 a base for supporting the desired crane capacity, and  
9 (c) locating a boom/cylinder position with respect to the  
10 boom foot position and the cylinder frame position such  
11 that a sufficient range of motion is provided and a  
12 sufficient leverage is provided for the desired crane  
13 capacity.

1           16.   An article of manufacture for adapting an excavator for use as  
2 a full or near-full capacity crane, the excavator comprising a lower  
3 crawler, an upper body and a receptacle secured to the upper body for  
4 receiving an excavation boom associated with an excavation implement, a  
5 cylinder and a crane boom with a foot associated with a crane implement,  
6 the article comprising a body member, the body member comprising:

- 7           (a)   a boom foot securing device for engaging the frame,
- 8           (b)   a cylinder frame securing device for engaging the frame  
9           such that the boom foot securing device and the  
10          cylinder frame securing device are required to be  
11          adequately spaced to provide a base for supporting the  
12          desired crane capacity, and
- 13          (c)   a boom/cylinder securing device with respect to the  
14          boom foot securing device and the cylinder frame  
15          securing device such that a sufficient range of motion is  
16          provided and a sufficient leverage is provided for the  
17          desired crane capacity.